

WHAT IS CLAIMED IS:

1. A lithographic apparatus, comprising:
 - an illumination system configured to provide a beam of radiation;
 - a support configured to support a patterning device, the patterning device configured to impart the beam with a pattern in its cross-section;
 - a substrate table configured to hold a substrate;
 - a projection system configured to project the patterned beam onto a target portion of the substrate;
 - a measurement system configured to generate an information signal including information about positions of at least one of the patterning device, the substrate, the projection system, and components of the projection system; and
 - a control system configured to control the positions and transform the information signal into at least a native feedback signal representing an imaging characteristic including at least one of focus, magnification and distortion, wherein the control system is configured to generate a control signal on the basis of a native set-point signal and the native feedback signal and control the positions on the basis of the control signal.
2. A lithographic apparatus according to claim 1, wherein the control system comprises a native feedforward controller configured to generate a feedforward control signal on the basis of the native set-point signal and to inject the feedforward signal in a control loop of the control system to control the positions.
3. A lithographic apparatus according to claim 1, wherein the control system further comprises:
 - a transformation unit configured to transform the information signal into the native feedback signal and wherein the lithographic apparatus further comprises:
 - an actuator configured to exert control forces on at least one of the support, the substrate table, and the projection system on the basis of the control signal.

4. A lithographic apparatus according to claim 1, wherein the projection system comprises a first lens element having a first position and a second lens element having a second position, the respective first and second positions each controlled by the control system.
5. A lithographic apparatus according to claim 1, wherein the central system comprises a native controller, said native controller comprising a single-in-single-out controller.
6. A lithographic apparatus according to claim 5, wherein the native controller comprises a second single-in-single-out controller configured to generate a second control signal, wherein the single-in-single-out controller corresponding to a selected native coordinate has the largest bandwidth.
7. A lithographic apparatus according to claim 5, wherein the native controller comprises a multiple-in-multiple-out controller configured to generate at least two control signals.
8. A lithographic apparatus according to claim 1, wherein the control system comprises a conventional controller configured to operate on conventional coordinates, and a native controller connected in cascade with the conventional controller.
9. A control system for a lithographic apparatus including an illumination system configured to provide a beam of radiation; a support configured to support a patterning device, the patterning device configured to impart the beam with a pattern in its cross-section; a substrate table configured to hold a substrate; a projection system configured to project the patterned beam onto a target portion of the substrate; a measurement system configured to generate an information signal including information about positions of at least one of the patterning device, the substrate, the projection system, and components therein, wherein the control system is configured to control the positions and transform the information signal into at least a native feedback signal representing an imaging characteristic including at least one of focus, magnification and distortion, the control system comprising:
a controller configured to generate a control signal on the basis of a native set-point

signal and a native feedback signal and control the positions on the basis of the control signal.

10. A device manufacturing method for manufacturing a device with a lithographic apparatus, the method comprising:

projecting a patterned beam of radiation onto a target portion of a substrate;

generating an information signal including information about positions of at least one of a patterning device used to pattern the beam of radiation, the substrate, a projection system used to project the patterned beam, and components of the projection system;

controlling the positions by:

transforming the information signal into at least a native feedback signal representing an imaging characteristic including at least one of focus, magnification and distortion;

generating a control signal on the basis of a native set-point signal and the native feedback signal; and

controlling the positions on the basis of the control signal.

11. A method according to claim 10, further comprising:

exerting control forces on at least one of a support for the patterning device, a substrate table for the substrate, and the projection system.

12. A method according to claim 10, wherein the projection system includes a first lens element having a first position and a second lens element having a second position, the method further comprising:

controlling the first and second positions.